

6570
1106

#6

OIEP

RAW SEQUENCE LISTING

DATE: 11/13/2001

PATENT APPLICATION: US/09/919,891

TIME: 15:27:19

Input Set : A:\211714US0X.txt

Output Set: N:\CRF3\11132001\I919891.raw

ENTERED

```

3 <110> APPLICANT: BATHE, BRIGITTE
4   MOCKEL, BETTINA
5   PFEFFERLE, WALTER
6   HUTHMACHER, KLAUS
7   RUCKERT, CHRISTIAN
8   KALINOWSKI, JORN
9   PUHLER, ALFRED
10  BINDER, MICHAEL
11  GREISSINGER, DIETER
12  THIERBACH, GEORG
14 <120> TITLE OF INVENTION: NUCLEOTIDE SEQUENCES WHICH CODE FOR THE METH GENE
16 <130> FILE REFERENCE: 211714US0X
18 <140> CURRENT APPLICATION NUMBER: 09/919,891
19 <141> CURRENT FILING DATE: 2001-08-02
21 <150> PRIOR APPLICATION NUMBER: DE 10038050.6
22 <151> PRIOR FILING DATE: 2000-08-02
24 <150> PRIOR APPLICATION NUMBER: DE 10109687.9
25 <151> PRIOR FILING DATE: 2001-02-28
27 <150> PRIOR APPLICATION NUMBER: US 60/294,251
28 <151> PRIOR FILING DATE: 2001-05-31
30 <160> NUMBER OF SEQ ID NOS: 4
32 <170> SOFTWARE: PatentIn version 3.1
34 <210> SEQ ID NO: 1
35 <211> LENGTH: 4301
36 <212> TYPE: DNA
37 <213> ORGANISM: Corynebacterium glutamicum
39 <220> FEATURE:
40 <221> NAME/KEY: CDS
41 <222> LOCATION: (385)..(4047)
42 <223> OTHER INFORMATION:
45 <400> SEQUENCE: 1
46 taagggtttt ggaggcattg gccgcgaacc catcgctggt catcccgggt ttgcgcatgc      60
48 cacgttcgta ttcataacca atcgcgatgc cttgagccca ccagccactg acatcaaagt      120
50 tgtccacgat gtgctttgcg atgtgggtgt gagtccaaga ggtggctttt acgtcgtcaa      180
52 gcaatttttag ccactcttcc cacggctttc cggtgccggt gaggatagct tcaggggaca      240
54 tgctgggtgt tgagccttgc ggagtggagt cagtcatgcg accgagacta gtggcgcttt      300
56 gcctgtgttg cttaggcggc gttgaaaatg aactacgaat gaaaagtctg ggaattgtct      360
58 aatccgtact aagctgtcta caca atg tct act tca gtt act tca cca gcc      411
59                               Met Ser Thr Ser Val Thr Ser Pro Ala
60                               1                               5
62 cac aac aac gca cat tcc tcc gaa ttt ttg gat gcg ttg gca aac cat      459
63 His Asn Asn Ala His Ser Ser Glu Phe Leu Asp Ala Leu Ala Asn His
64 10                               15                               20                               25
66 gtg ttg atc ggc gac ggc gcc atg ggc acc cag ctc caa ggc ttt gac      507
67 Val Leu Ile Gly Asp Gly Ala Met Gly Thr Gln Leu Gln Gly Phe Asp
68                               30                               35                               40
70 ctg gac gtg gaa aag gat ttc ctt gat ctg gag ggg tgt aat gag att      555

```

RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/919,891

DATE: 11/13/2001

TIME: 15:27:19

Input Set : A:\211714US0X.txt

Output Set: N:\CRF3\11132001\I919891.raw

71	Leu	Asp	Val	Glu	Lys	Asp	Phe	Leu	Asp	Leu	Glu	Gly	Cys	Asn	Glu	Ile	
72				45					50					55			
74	ctc	aac	gac	acc	cgc	cct	gat	gtg	ttg	agg	cag	att	cac	cgc	gcc	tac	603
75	Leu	Asn	Asp	Thr	Arg	Pro	Asp	Val	Leu	Arg	Gln	Ile	His	Arg	Ala	Tyr	
76			60					65					70				
78	ttt	gag	gcg	gga	gct	gac	ttg	gtt	gag	acc	aat	act	ttt	ggt	tgc	aac	651
79	Phe	Glu	Ala	Gly	Ala	Asp	Leu	Val	Glu	Thr	Asn	Thr	Phe	Gly	Cys	Asn	
80		75					80					85					
82	ctg	ccg	aac	ttg	gcg	gat	tat	gac	atc	gct	gat	cgt	tgc	cgt	gag	ctt	699
83	Leu	Pro	Asn	Leu	Ala	Asp	Tyr	Asp	Ile	Ala	Asp	Arg	Cys	Arg	Glu	Leu	
84	90					95				100					105		
86	gcc	tac	aag	ggc	act	gca	gtg	gct	agg	gaa	gtg	gct	gat	gag	atg	ggg	747
87	Ala	Tyr	Lys	Gly	Thr	Ala	Val	Ala	Arg	Glu	Val	Ala	Asp	Glu	Met	Gly	
88					110				115				120				
90	ccg	ggc	cga	aac	ggc	atg	cgg	cgt	ttc	gtg	gtt	ggt	tcc	ctg	gga	cct	795
91	Pro	Gly	Arg	Asn	Gly	Met	Arg	Arg	Phe	Val	Val	Gly	Ser	Leu	Gly	Pro	
92				125				130					135				
94	gga	acg	aag	ctt	cca	tcg	ctg	ggc	cat	gca	ccg	tat	gca	gat	ttg	cgt	843
95	Gly	Thr	Lys	Leu	Pro	Ser	Leu	Gly	His	Ala	Pro	Tyr	Ala	Asp	Leu	Arg	
96			140				145					150					
98	ggg	cac	tac	aag	gaa	gca	gcg	ctt	ggc	atc	atc	gac	ggt	ggt	ggc	gat	891
99	Gly	His	Tyr	Lys	Glu	Ala	Ala	Leu	Gly	Ile	Ile	Asp	Gly	Gly	Gly	Asp	
100		155				160				165							
102	gcc	ttt	ttg	att	gag	act	gct	cag	gac	ttg	ctt	cag	gtc	aag	gct	gcg	939
103	Ala	Phe	Leu	Ile	Glu	Thr	Ala	Gln	Asp	Leu	Leu	Gln	Val	Lys	Ala	Ala	
104	170					175				180					185		
106	gtt	cac	ggc	gtt	caa	gat	gcc	atg	gct	gaa	ctt	gat	aca	ttc	ttg	ccc	987
107	Val	His	Gly	Val	Gln	Asp	Ala	Met	Ala	Glu	Leu	Asp	Thr	Phe	Leu	Pro	
108				190				195					200				
110	att	att	tgc	cac	gtc	acc	gta	gag	acc	acc	ggc	acc	atg	ctc	atg	ggt	1035
111	Ile	Ile	Cys	His	Val	Thr	Val	Glu	Thr	Thr	Gly	Thr	Met	Leu	Met	Gly	
112			205					210					215				
114	tct	gag	atc	ggt	gcc	gcg	ttg	aca	gcg	ctg	cag	cca	ctg	ggt	atc	gac	1083
115	Ser	Glu	Ile	Gly	Ala	Ala	Leu	Thr	Ala	Leu	Gln	Pro	Leu	Gly	Ile	Asp	
116			220				225					230					
118	atg	att	ggt	ctg	aac	tgc	gcc	acc	ggc	cca	gat	gag	atg	agc	gag	cac	1131
119	Met	Ile	Gly	Leu	Asn	Cys	Ala	Thr	Gly	Pro	Asp	Glu	Met	Ser	Glu	His	
120		235				240					245						
122	ctg	cgt	tac	ctg	tcc	aag	cac	gcc	gat	att	cct	gtg	tcg	gtg	atg	cct	1179
123	Leu	Arg	Tyr	Leu	Ser	Lys	His	Ala	Asp	Ile	Pro	Val	Ser	Val	Met	Pro	
124	250				255					260					265		
126	aac	gca	ggt	ctt	cct	gtc	ctg	ggt	aaa	aac	ggt	gca	gaa	tac	cca	ctt	1227
127	Asn	Ala	Gly	Leu	Pro	Val	Leu	Gly	Lys	Asn	Gly	Ala	Glu	Tyr	Pro	Leu	
128			270					275				280					
130	gag	gct	gag	gat	ttg	gcg	cag	gcg	ctg	gct	gga	ttc	gtc	tcc	gaa	tat	1275
131	Glu	Ala	Glu	Asp	Leu	Ala	Gln	Ala	Leu	Ala	Gly	Phe	Val	Ser	Glu	Tyr	
132			285					290				295					
134	ggc	ctg	tcc	atg	gtg	ggt	ggt	tgt	tgt	ggc	acc	aca	cct	gag	cac	atc	1323
135	Gly	Leu	Ser	Met	Val	Gly	Gly	Cys	Cys	Gly	Thr	Thr	Pro	Glu	His	Ile	

RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/919,891

DATE: 11/13/2001

TIME: 15:27:19

Input Set : A:\211714US0X.txt

Output Set: N:\CRF3\11132001\I919891.raw

136	300	305	310	
138	cgt gcg gtc cgc gat gcg gtg gtt ggt gtt cca gag cag gaa acc tcc	1371		
139	Arg Ala Val Arg Asp Ala Val Val Gly Val Pro Glu Gln Glu Thr Ser			
140	315	320	325	
142	aca ctg acc aag atc cct gca ggc cct gtt gag cag gcc tcc cgc gag	1419		
143	Thr Leu Thr Lys Ile Pro Ala Gly Pro Val Glu Gln Ala Ser Arg Glu			
144	330	335	340	345
146	gtg gag aaa gag gac tcc gtc gcg tcg ctg tac acc tcg gtg cca ttg	1467		
147	Val Glu Lys Glu Asp Ser Val Ala Ser Leu Tyr Thr Ser Val Pro Leu			
148	350	355	360	
150	tcc cag gaa acc ggc att tcc atg atc ggt gag cgc acc aac tcc aac	1515		
151	Ser Gln Glu Thr Gly Ile Ser Met Ile Gly Glu Arg Thr Asn Ser Asn			
152	365	370	375	
154	ggt tcc aag gca ttc cgt gag gca atg ctg tct ggc gat tgg gaa aag	1563		
155	Gly Ser Lys Ala Phe Arg Glu Ala Met Leu Ser Gly Asp Trp Glu Lys			
156	380	385	390	
158	tgt gtg gat att gcc aag cag caa acc cgc gat ggt gca cac atg ctg	1611		
159	Cys Val Asp Ile Ala Lys Gln Gln Thr Arg Asp Gly Ala His Met Leu			
160	395	400	405	
162	gat ctt tgt gtg gat tac gtg gga cga gac ggc acc gcc gat atg gcg	1659		
163	Asp Leu Cys Val Asp Tyr Val Gly Arg Asp Gly Thr Ala Asp Met Ala			
164	410	415	420	425
166	acc ttg gca gca ctt ctt gct acc agc tcc act ttg cca atc atg att	1707		
167	Thr Leu Ala Ala Leu Leu Ala Thr Ser Ser Thr Leu Pro Ile Met Ile			
168	430	435	440	
170	gac tcc acc gag cca gag gtt att cgc aca ggc ctt gag cac ttg ggt	1755		
171	Asp Ser Thr Glu Pro Glu Val Ile Arg Thr Gly Leu Glu His Leu Gly			
172	445	450	455	
174	gga cga agc atc gtt aac tcc gtc aac ttt gaa gac ggc gat ggc cct	1803		
175	Gly Arg Ser Ile Val Asn Ser Val Asn Phe Glu Asp Gly Asp Gly Pro			
176	460	465	470	
178	gag tcc cgc tac cag cgc atc atg aaa ctg gta aag cag cac ggt gcg	1851		
179	Glu Ser Arg Tyr Gln Arg Ile Met Lys Leu Val Lys Gln His Gly Ala			
180	475	480	485	
182	gcc gtg gtt gcg ctg acc att gat gag gaa ggc cag gca cgt acc gct	1899		
183	Ala Val Val Ala Leu Thr Ile Asp Glu Glu Gly Gln Ala Arg Thr Ala			
184	490	495	500	505
186	gag cac aag gtg cgc att gct aaa cga ctg att gac gat atc acc ggc	1947		
187	Glu His Lys Val Arg Ile Ala Lys Arg Leu Ile Asp Asp Ile Thr Gly			
188	510	515	520	
190	agc tac ggc ctg gat atc aaa gac atc gtt gtg gac tgc ctg acc ttc	1995		
191	Ser Tyr Gly Leu Asp Ile Lys Asp Ile Val Val Asp Cys Leu Thr Phe			
192	525	530	535	
194	ccg atc tct act ggc cag gaa gaa acc agg cga gat ggc att gaa acc	2043		
195	Pro Ile Ser Thr Gly Gln Glu Glu Thr Arg Arg Asp Gly Ile Glu Thr			
196	540	545	550	
198	atc gaa gcc atc cgc gag ctg aag aag ctc tac cca gaa atc cac acc	2091		
199	Ile Glu Ala Ile Arg Glu Leu Lys Lys Leu Tyr Pro Glu Ile His Thr			
200	555	560	565	

RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/919,891

DATE: 11/13/2001

TIME: 15:27:19

Input Set : A:\211714US0X.txt

Output Set: N:\CRF3\11132001\I919891.raw

202	acc	ctg	ggt	ctg	tcc	aat	att	tcc	ttc	ggc	ctg	aac	cct	gct	gca	cgc	2139
203	Thr	Leu	Gly	Leu	Ser	Asn	Ile	Ser	Phe	Gly	Leu	Asn	Pro	Ala	Ala	Arg	
204	570					575					580					585	
206	cag	gtt	ctt	aac	tct	gtg	ttc	ctc	aat	gag	tgc	att	gag	gct	ggt	ctg	2187
207	Gln	Val	Leu	Asn	Ser	Val	Phe	Leu	Asn	Glu	Cys	Ile	Glu	Ala	Gly	Leu	
208					590					595					600		
210	gac	tct	gcg	att	gcg	cac	agc	tcc	aag	att	ttg	ccg	atg	aac	cgc	att	2235
211	Asp	Ser	Ala	Ile	Ala	His	Ser	Ser	Lys	Ile	Leu	Pro	Met	Asn	Arg	Ile	
212				605					610					615			
214	gat	gat	cgc	cag	cgc	gaa	gtg	gcg	ttg	gat	atg	gtc	tat	gat	cgc	cgc	2283
215	Asp	Asp	Arg	Gln	Arg	Glu	Val	Ala	Leu	Asp	Met	Val	Tyr	Asp	Arg	Arg	
216			620					625					630				
218	acc	gag	gat	tac	gat	ccg	ctg	cag	gaa	ttc	atg	cag	ctg	ttt	gag	ggc	2331
219	Thr	Glu	Asp	Tyr	Asp	Pro	Leu	Gln	Glu	Phe	Met	Gln	Leu	Phe	Glu	Gly	
220		635				640						645					
222	gtt	tct	gct	gcc	gat	gcc	aag	gat	gct	cgc	gct	gaa	cag	ctg	gcc	gct	2379
223	Val	Ser	Ala	Ala	Asp	Ala	Lys	Asp	Ala	Arg	Ala	Glu	Gln	Leu	Ala	Ala	
224	650					655				660					665		
226	atg	cct	ttg	ttt	gag	cgt	ttg	gca	cag	cgc	atc	atc	gac	ggc	gat	aag	2427
227	Met	Pro	Leu	Phe	Glu	Arg	Leu	Ala	Gln	Arg	Ile	Ile	Asp	Gly	Asp	Lys	
228				670					675					680			
230	aat	ggc	ctt	gag	gat	gat	ctg	gaa	gca	ggc	atg	aag	gag	aag	tct	cct	2475
231	Asn	Gly	Leu	Glu	Asp	Asp	Leu	Glu	Ala	Gly	Met	Lys	Glu	Lys	Ser	Pro	
232				685					690					695			
234	att	gcg	atc	atc	aac	gag	gac	ctt	ctc	aac	ggc	atg	aag	acc	gtg	ggt	2523
235	Ile	Ala	Ile	Ile	Asn	Glu	Asp	Leu	Leu	Asn	Gly	Met	Lys	Thr	Val	Gly	
236			700					705					710				
238	gag	ctg	ttt	ggt	tcc	gga	cag	atg	cag	ctg	cca	ttc	gtg	ctg	caa	tcg	2571
239	Glu	Leu	Phe	Gly	Ser	Gly	Gln	Met	Gln	Leu	Pro	Phe	Val	Leu	Gln	Ser	
240		715				720					725						
242	gca	gaa	acc	atg	aaa	act	gcg	gtg	gcc	tat	ttg	gaa	ccg	ttc	atg	gaa	2619
243	Ala	Glu	Thr	Met	Lys	Thr	Ala	Val	Ala	Tyr	Leu	Glu	Pro	Phe	Met	Glu	
244	730					735					740				745		
246	gag	gaa	gca	gaa	gct	acc	gga	tct	gcg	cag	gca	gag	ggc	aag	ggc	aaa	2667
247	Glu	Glu	Ala	Glu	Ala	Thr	Gly	Ser	Ala	Gln	Ala	Glu	Gly	Lys	Gly	Lys	
248				750					755					760			
250	atc	gtc	gtg	gcc	acc	gtc	aag	ggt	gac	gtg	cac	gat	atc	ggc	aag	aac	2715
251	Ile	Val	Val	Ala	Thr	Val	Lys	Gly	Asp	Val	His	Asp	Ile	Gly	Lys	Asn	
252				765					770					775			
254	ttg	gtg	gac	atc	att	ttg	tcc	aac	aac	ggt	tac	gac	gtg	gtg	aac	ttg	2763
255	Leu	Val	Asp	Ile	Ile	Leu	Ser	Asn	Asn	Gly	Tyr	Asp	Val	Val	Asn	Leu	
256			780					785					790				
258	ggc	atc	aag	cag	cca	ctg	tcc	gcc	atg	ttg	gaa	gca	gcg	gaa	gaa	cac	2811
259	Gly	Ile	Lys	Gln	Pro	Leu	Ser	Ala	Met	Leu	Glu	Ala	Ala	Glu	Glu	His	
260		795				800					805						
262	aaa	gca	gac	gtc	atc	ggc	atg	tcg	gga	ctt	ctt	gtg	aag	tcc	acc	gtg	2859
263	Lys	Ala	Asp	Val	Ile	Gly	Met	Ser	Gly	Leu	Leu	Val	Lys	Ser	Thr	Val	
264	810					815					820				825		
266	gtg	atg	aag	gaa	aac	ctt	gag	gag	atg	aac	aac	gcc	ggc	gca	tcc	aat	2907

RAW SEQUENCE LISTING

DATE: 11/13/2001

PATENT APPLICATION: US/09/919,891

TIME: 15:27:19

Input Set : A:\211714US0X.txt

Output Set: N:\CRF3\11132001\I919891.raw

267	Val	Met	Lys	Glu	Asn	Leu	Glu	Glu	Met	Asn	Asn	Ala	Gly	Ala	Ser	Asn	
268					830					835				840			
270	tac	cca	gtc	att	ttg	ggt	ggc	gct	gcg	ctg	acg	cgt	acc	tac	gtg	gaa	2955
271	Tyr	Pro	Val	Ile	Leu	Gly	Gly	Ala	Ala	Leu	Thr	Arg	Thr	Tyr	Val	Glu	
272				845					850					855			
274	aac	gat	ctc	aac	gag	gtg	tac	acc	ggt	gag	gtg	tac	tac	gcc	cgt	gat	3003
275	Asn	Asp	Leu	Asn	Glu	Val	Tyr	Thr	Gly	Glu	Val	Tyr	Tyr	Ala	Arg	Asp	
276			860						865					870			
278	gct	ttc	gag	ggc	ctg	cgc	ctg	atg	gat	gag	gtg	atg	gca	gaa	aag	cgt	3051
279	Ala	Phe	Glu	Gly	Leu	Arg	Leu	Met	Asp	Glu	Val	Met	Ala	Glu	Lys	Arg	
280		875					880						885				
282	ggt	gaa	gga	ctt	gat	ccc	aac	tca	cca	gaa	gct	att	gag	cag	gcg	aag	3099
283	Gly	Glu	Gly	Leu	Asp	Pro	Asn	Ser	Pro	Glu	Ala	Ile	Glu	Gln	Ala	Lys	
284	890					895					900				905		
286	aag	aag	gcg	gaa	cgt	aag	gct	cgt	aat	gag	cgt	tcc	cgc	aag	att	gcc	3147
287	Lys	Lys	Ala	Glu	Arg	Lys	Ala	Arg	Asn	Glu	Arg	Ser	Arg	Lys	Ile	Ala	
288				910					915					920			
290	gcg	gag	cgt	aaa	gct	aat	gcg	gct	ccc	gtg	att	gtt	ccg	gag	cgt	tct	3195
291	Ala	Glu	Arg	Lys	Ala	Asn	Ala	Ala	Pro	Val	Ile	Val	Pro	Glu	Arg	Ser	
292				925					930					935			
294	gat	gtc	tcc	acc	gat	act	cca	acc	gcg	gca	cca	ccg	ttc	tgg	gga	acc	3243
295	Asp	Val	Ser	Thr	Asp	Thr	Pro	Thr	Ala	Ala	Pro	Pro	Phe	Trp	Gly	Thr	
296			940					945						950			
298	cgc	att	gtc	aag	ggt	ctg	ccc	ttg	gcg	gag	ttc	ttg	ggc	aac	ctt	gat	3291
299	Arg	Ile	Val	Lys	Gly	Leu	Pro	Leu	Ala	Glu	Phe	Leu	Gly	Asn	Leu	Asp	
300		955				960					965						
302	gag	cgc	gcc	ttg	ttc	atg	ggg	cag	tgg	ggt	ctg	aaa	tcc	acc	cgc	ggc	3339
303	Glu	Arg	Ala	Leu	Phe	Met	Gly	Gln	Trp	Gly	Leu	Lys	Ser	Thr	Arg	Gly	
304	970				975				980					985			
306	aac	gag	ggt	cca	agc	tat	gag	gat	ttg	gtg	gaa	act	gaa	ggc	cga	cca	3387
307	Asn	Glu	Gly	Pro	Ser	Tyr	Glu	Asp	Leu	Val	Glu	Thr	Glu	Gly	Arg	Pro	
308				990					995					1000			
310	cgc	ctg	cgc	tac	tgg	ctg	gat	cgc	ctg	aag	tct	gag	ggc	att	ttg		3432
311	Arg	Leu	Arg	Tyr	Trp	Leu	Asp	Arg	Leu	Lys	Ser	Glu	Gly	Ile	Leu		
312				1005					1010					1015			
314	gac	cac	gtg	gcc	ttg	gtg	tat	ggc	tac	ttc	cca	gcg	gtc	gcg	gaa		3477
315	Asp	His	Val	Ala	Leu	Val	Tyr	Gly	Tyr	Phe	Pro	Ala	Val	Ala	Glu		
316				1020					1025					1030			
318	ggc	gat	gac	gtg	gtg	atc	ttg	gaa	tcc	ccg	gat	cca	cac	gca	gcc		3522
319	Gly	Asp	Asp	Val	Val	Ile	Leu	Glu	Ser	Pro	Asp	Pro	His	Ala	Ala		
320				1035					1040					1045			
322	gaa	cgc	atg	cgc	ttt	agc	ttc	cca	cgc	cag	cag	cgc	ggc	agg	ttc		3567
323	Glu	Arg	Met	Arg	Phe	Ser	Phe	Pro	Arg	Gln	Gln	Arg	Gly	Arg	Phe		
324				1050					1055					1060			
326	ttg	tgc	atc	gcg	gat	ttc	att	cgc	cca	cgc	gag	caa	gct	gtc	aag		3612
327	Leu	Cys	Ile	Ala	Asp	Phe	Ile	Arg	Pro	Arg	Glu	Gln	Ala	Val	Lys		
328				1065					1070					1075			
330	gac	ggc	caa	gtg	gac	gtc	atg	cca	ttc	cag	ctg	gtc	acc	atg	ggt		3657
331	Asp	Gly	Gln	Val	Asp	Val	Met	Pro	Phe	Gln	Leu	Val	Thr	Met	Gly		

VERIFICATION SUMMARY

PATENT APPLICATION: US/09/919,891

DATE: 11/13/2001

TIME: 15:27:20

Input Set : A:\211714US0X.txt

Output Set: N:\CRF3\11132001\I919891.raw